

From mparkinson1 at socal.rr.com Thu Oct 1 00:24:51 2020  
From: mparkinson1 at socal.rr.com (mparkinson1 at socal.rr.com)  
Date: Wed, 30 Sep 2020 21:24:51 -0700  
Subject: [BoatAnchors] Boatanchors away!  
In-Reply-To: <0094FF04372D45078C32EEA2BCA40B6F@Lenovo>  
References: <b7f74801-b70c-b9b1-a9fa-055ad5c964c7@comcast.net>  
<CAFTq00SFDm0-jEe-wqYzm7J7rutmXDjg5qBrQNUrUq9C2J-iGA@mail.gmail.com>  
<F5AC1D185951469590E2DF09C7116ED0@Lenovo>  
<51739C7EFCE74CB7B2493E1E5499E4AC@Lenovo>  
<0094FF04372D45078C32EEA2BCA40B6F@Lenovo>  
Message-ID: <155601d697aa\$ce998390\$6bcc8ab0\$@socal.rr.com>

I am interested in the National 183D receiver  
How much I realize it been in storage for a while.  
Let me know how much thanks.  
Shipping to 92866  
Matt Parkinson

-----Original Message-----

From: BoatAnchors <boatanchors-bounces at lists.theporch.com> On Behalf Of  
Arden Allen via BoatAnchors  
Sent: Wednesday, September 30, 2020 7:48 PM  
To: Ham radios with tubes <boatanchors at lists.theporch.com>  
Cc: Arden Allen <gumbear at pacbell.net>  
Subject: Re: [BoatAnchors] Boatanchors away!

And even more!!!:

HP 330B Harmonic Distortion Analyzer  
HP 330C Harmonic Distortion Analyzer  
Boonton 202B FM Sig Gen #1 - rebuilt power supply, works fine Boonton 202B  
FM Sig Gen #2 - rebuilt power supply, works fine HP H13-120AR (specialized  
rack mount HP 120) HP 302A Wave Analyzer General Radio 805C Standard Signal  
Generator - works well Hallicrafters SX-42 receiver  
WW2 Morale Receiver (no name plate), four bands, slide rule dial

-----Original Message-----

From: Arden Allen via BoatAnchors  
Sent: Sunday, September 27, 2020 12:30 PM  
To: Ham radios with tubes  
Cc: Arden Allen  
Subject: Re: [BoatAnchors] Boatanchors away!

And there's more:

National NCX-3 transceiver #1  
National NCX-3 transceiver #2  
National AC power supply for NCX-3

National NC-183  
National NC-183D  
National NC-300  
Multi-Elmac AF-67 with power supply  
R-366/TRR5 receiver  
RBL-3/CWQ-46161-A receiver

See terms and conditions below (the stuff's gotta go!)

Boatanchor shoppers;

I'm cleaning out my storage unit. It doesn't make sense to keep this stuff anymore. This is the first lot, more to come. You can have any of these items for pennies a pound. Or free if you're destitute. Pick up in the SF Bay area or pay for shipping.

Swan 260 transceiver  
Swan 270B transceiver #1  
Swan 270B transceiver #2  
Swan 117XC power supply  
Globe Star AC operated CB transceiver (nice) Eico 720 transmitter Johnson Viking II #1 Johnson Viking II #2 (some cabinet damage) EH Scott SLR-F Heathkit DX-100 Tektronix 547 #1 Tektronix 547 #2 Tektronix 545B Tektronix 575 Boonton 250A RX meter

If you are interested in any item let me know. Thanks.

Arden

Arden Allen  
KB6NAX

.....

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BoatAnchors mailing list  
BoatAnchors at [lists.theporch.com](mailto:lists.theporch.com)  
<https://lists.theporch.com/mailman/listinfo/boatanchors>

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<https://lists.theporch.com/mailman/listinfo/boatanchors>

From k7sz at live.com Thu Oct 1 00:35:47 2020  
From: k7sz at live.com (Rich Arland)  
Date: Thu, 1 Oct 2020 04:35:47 +0000  
Subject: [BoatAnchors] FS: Novice Station Stuff  
Message-ID:  
<BN6PR1301MB18738475A93519B637137602F6300@BN6PR1301MB1873.namprd13.prod.outlook.com>

I have the following for sale:

Knight Kit T-60 (Vy good cosmetic condx, all original knobs, manual from Pete at ManualMan). I started collecting some things for a Novice station project about 4 yrs ago and realize that I am not going to have the time (or inclination) to do the project. I have not fired this TX up but it looks great inside and out. \$75 plus s/h.

Knight Kit R-55 RX. (Fair cosmetic condx, needs new speaker, both dial strings need to be replaced, counter weight needs afixing to shaft, probably needs new caps in the PSU). \$50 plus s/h.

National NC-121 Novice RX from the early 1960s (answer to the HR-10 Heathkit and the R-55 Knight Kit). vy good cosmetics, needs main dial restrung. It does fire up and I get audio but needs new PSU caps and alignment. Copy of manual. \$75 plus s/h.

May have more ham items once I get to work on the shack and the stacks of gear I have piled up.

Need to really thin the herd as I now have a tiny shack (corner of a bedroom) and very little room to show/store/use the larger boatanchor radios.

Interested? Please contact me off list at k7sz at live dot com.

Vy 73  
??  
Rich K7SZ

"?The vast majority of the world's problems can be overcome with the proper application of high explosives!?"  
(SSgt Jon Nelson, 5th Special Forces Group, Airborne)

From gumbear at pacbell.net Thu Oct 1 03:12:54 2020  
From: gumbear at pacbell.net (Arden Allen)  
Date: Thu, 1 Oct 2020 00:12:54 -0700

Subject: [BoatAnchors] Boatanchors away!  
In-Reply-To: <155601d697aa\$ce998390\$6bcc8ab0\$@socal.rr.com>  
References: <b7f74801-b70c-b9b1-a9fa-055ad5c964c7@comcast.net>  
<CAFTq00SFDM0-jEe-wqYzm7J7rutmXDjg5qBrQNUrUq9C2J-iGA@mail.gmail.com>  
<F5AC1D185951469590E2DF09C7116ED0@Lenovo>  
<51739C7EFCE74CB7B2493E1E5499E4AC@Lenovo>  
<0094FF04372D45078C32EEA2BCA40B6F@Lenovo>  
<155601d697aa\$ce998390\$6bcc8ab0\$@socal.rr.com>  
Message-ID: <5E6129247DD847709DE88EFCE922D027@Lenovo>

Hi Mark,

I picked it up many years ago and have done nothing with it except let it collect dust. If you are interested make me an offer and then I'll get the shipping cost to 92866.

Arden

-----Original Message-----

From: mparkinson1 at socal.rr.com  
Sent: Wednesday, September 30, 2020 9:24 PM  
To: 'Ham radios with tubes'  
Subject: Re: [BoatAnchors] Boatanchors away!

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How much I realize it been in storage for a while.  
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Arden Allen via BoatAnchors  
Sent: Wednesday, September 30, 2020 7:48 PM  
To: Ham radios with tubes <boatanchors at lists.theporch.com>  
Cc: Arden Allen <gumbear at pacbell.net>  
Subject: Re: [BoatAnchors] Boatanchors away!

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National NC-183  
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R-366/TRR5 receiver  
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If you are interested in any item let me know. Thanks.

Arden

Arden Allen  
KB6NAX

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BoatAnchors at lists.theporch.com  
<https://lists.theporch.com/mailman/listinfo/boatanchors>

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BoatAnchors at lists.theporch.com  
<https://lists.theporch.com/mailman/listinfo/boatanchors>

From k7sz at live.com Thu Oct 1 21:02:06 2020  
From: k7sz at live.com (Rich Arland)  
Date: Fri, 2 Oct 2020 01:02:06 +0000  
Subject: [BoatAnchors] Novice Station Stuff  
In-Reply-To:  
<BN6PR1301MB18738475A93519B637137602F6300@BN6PR1301MB1873.namprd13.prod.outlook.com>  
References:  
<BN6PR1301MB18738475A93519B637137602F6300@BN6PR1301MB1873.namprd13.prod.outlook.com>  
Message-ID:  
<BN6PR1301MB1873CC306E237F2C22F9DFD8F6310@BN6PR1301MB1873.namprd13.prod.outlook.com>

The T-60 and the R-55A have been sold.

I still have the National NC-121: \$75

Vy 73  
??  
Rich K7SZ

From k9ffk at comcast.net Fri Oct 2 14:12:07 2020  
From: k9ffk at comcast.net (K9FFK)  
Date: Fri, 2 Oct 2020 13:12:07 -0500  
Subject: [BoatAnchors] Johnson Viking II Fuses - A FUSED LINE CORD PLUG  
CAN MAKE YOUR WIFE INTO A WIDOW  
In-Reply-To: <03324666ED834276B661D1073B0C0C1A@Lenovo>

References: <63f60c77-5cd8-c264-10b1-b7da164f0923@ix.netcom.com>  
<AD9A8451-13F2-418E-B959-A5C9C2C00043@gmail.com>  
<03324666ED834276B661D1073B0C0C1A@Lenovo>  
Message-ID: <1c9943b8-f15d-97d5-20ca-97752292fec2@comcast.net>

Arden:

You mean NEMA-5, 5-15 for 15A loads and 5-20 for 20 amp loads.

NEMA-15 is for use with 250V, 3-phase loads up to 60A.

The only real issue is whether or not one is color blind and can't tell the difference between a darker green and black or white and tan.

If your house is miswired, all bets are off.

Dick K9FFK

On 9/27/2020 2:21 PM, Arden Allen via BoatAnchors wrote:

> I saved Dave's Diatribe for later thorough study.? However it  
> immediately brought to mind the Elephant Poop in the Room:  
>  
> NEMA 15 plugs and receptacles are not really so smart.? If anything  
> has a higher failure rate than them it's a well kept secret.? Reversed  
> Line and Neutral (plus) short to chassis (minus) Protective Earth  
> Continuity (equals) one new Widow.? If you don't know the state of  
> your premises wiring I hope your will is up to date.

>

> Arden

>

> -----Original Message----- From: Roy Morgan via BoatAnchors  
> Sent: Sunday, September 27, 2020 8:17 AM  
> To: Ham radios with tubes  
> Cc: Roy Morgan ; Boatanchors at mailman  
> Subject: Re: [BoatAnchors] Johnson Viking II Fuses

>

>

>> On Sep 17, 2020, at 10:43 AM, David Stinson via BoatAnchors  
>> <boatanchors at lists.theporch.com> wrote:

>>

>> Johnson Viking II:

>> I would like to fuse the primary for the LV transformer.

>> Anyone done this?? Recommended fuse value?

>

> Dave and other Johnson owners.

>

> Johnson used fused line cord plugs on equipment back then.

>

> A FUSED LINE CORD PLUG CAN MAKE YOUR WIFE INTO A WIDOW.  
>  
> My diatribe ?powercordsandbypassing.txt? tells how, attached here for  
> anyone who would like to avoid early death.  
>  
>  
> ----- next part -----  
> An embedded and charset-unspecified text was scrubbed...  
> Name: powercordsandbypassing.txt  
> URL:  
> <<https://lists.theporch.com/mailman/private/boatanchors/attachments/20200927/d66d5330/attachment.txt>>  
> ----- next part -----  
>  
>  
>  
> Roy Morgan  
> K1LKY since 1958  
> k1lky68 at gmail.com  
>  
>  
>  
>  
> -----  
> BoatAnchors mailing list  
> BoatAnchors at lists.theporch.com  
> <https://lists.theporch.com/mailman/listinfo/boatanchors>  
> -----  
> BoatAnchors mailing list  
> BoatAnchors at lists.theporch.com  
> <https://lists.theporch.com/mailman/listinfo/boatanchors>

From artleb at earthlink.net Sat Oct 3 03:48:52 2020  
From: artleb at earthlink.net (Art Lebermann)  
Date: Sat, 3 Oct 2020 00:48:52 -0700  
Subject: [BoatAnchors] Problem with URM-25D Signal Gen.  
Message-ID: <15F312AB5B2849BCBCD2113CCBD94387@Arthurone>

Looking for help with a URM-25D signal generator.

Operation is normal with the ?METER READS? switch in CW and XTAL positions. RF output is present, and meter responds to the MICROVOLTS and SET CARRIER controls. Calibration is correct.

With switch in EXT, 400 or 1000 position (modulated RF) the meter ?pegs?. % MOD / AUDIO OUT control will adjust modulation level (as observed on AM receiver), but meter stays pegged.



I have a copy of the NAVSHIPS manual (1966 rev.) and service notes from Dallas Lankford.

Any suggestions? Possible leaky or shorted C167?

73,  
Art Lebermann, W6REQ  
artleb at earthlink.net

From gumbear at pacbell.net Sat Oct 3 07:56:59 2020  
From: gumbear at pacbell.net (Arden Allen)  
Date: Sat, 3 Oct 2020 04:56:59 -0700  
Subject: [BoatAnchors] Problem with URM-25D Signal Gen.  
In-Reply-To: <15F312AB5B2849BCBCD2113CCBD94387@Arthurone>  
References: <15F312AB5B2849BCBCD2113CCBD94387@Arthurone>  
Message-ID: <F572948F1BB54CDA92DB79942D2A66D6@Lenovo>

With URM-25D power off check the two 1N69 germanium diodes with your multimeter diode test. Pull V106 to kill audio oscillator. With power on URM-25D measure voltage at junction of C167, CR101 and R170. The voltage there should be zero. If not C167 is probably leaky. Lift one lead of C167, meter should read zero.

Arden

-----Original Message-----

From: Art Lebermann via BoatAnchors  
Sent: Saturday, October 03, 2020 12:48 AM  
To: Boatanchors  
Cc: Art Lebermann  
Subject: [BoatAnchors] Problem with URM-25D Signal Gen.

Looking for help with a URM-25D signal generator.

Operation is normal with the ?METER READS? switch in CW and XTAL positions. RF output is present, and meter responds to the MICROVOLTS and SET CARRIER controls. Calibration is correct.

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artleb at earthlink.net

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BoatAnchors mailing list  
BoatAnchors at lists.theporch.com  
<https://lists.theporch.com/mailman/listinfo/boatanchors>

From knjhanlon at msn.com Sat Oct 3 13:28:41 2020  
From: knjhanlon at msn.com (JAMES HANLON)  
Date: Sat, 3 Oct 2020 17:28:41 +0000  
Subject: [BoatAnchors] Need plate/grid clips  
Message-ID:  
<DM6PR20MB3018A8D54014582FEDAB6162A00E0@DM6PR20MB3018.namprd20.prod.outlook.com>

Y'all,

My friend Eldon Loomis, kc5u at yahoo.com, has just acquired a beautiful SW-3 and is working on winding some bandspread coils for it. He needs some plate/grid clips, of the size to attach to 3/8" grid caps on his RF amp and detector tubes. They are the same size and type as used in Command Set transmitters to attach to the 1625 plates. If you can help him out please contact him at the email address above.

Thanks very much,

Jim, W8KGI

From artleb at earthlink.net Sun Oct 4 20:24:18 2020  
From: artleb at earthlink.net (Art Lebermann)  
Date: Sun, 4 Oct 2020 17:24:18 -0700  
Subject: [BoatAnchors] Problem with URM-25D Signal Gen.  
In-Reply-To: <F572948F1BB54CDA92DB79942D2A66D6@Lenovo>  
References: <15F312AB5B2849BCBCD2113CCBD94387@Arthurone>  
<F572948F1BB54CDA92DB79942D2A66D6@Lenovo>  
Message-ID: <CB5FE708204143198A28BF2A24894A8F@Arthurone>

Repairs completed, all OK. Found C167 leaky and C166 shorted!

ART

-----Original Message-----

From: Arden Allen via BoatAnchors  
Sent: Saturday, October 03, 2020 4:56 AM  
To: Ham radios with tubes  
Cc: Arden Allen  
Subject: Re: [BoatAnchors] Problem with URM-25D Signal Gen.

With URM-25D power off check the two 1N69 germanium diodes with your multimeter diode test. Pull V106 to kill audio oscillator. With power on URM-25D measure voltage at junction of C167, CR101 and R170. The voltage there should be zero. If not C167 is probably leaky. Lift one lead of C167, meter should read zero.

Arden

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From: Art Lebermann via BoatAnchors

Sent: Saturday, October 03, 2020 12:48 AM

To: Boatanchors

Cc: Art Lebermann

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artleb at earthlink.net

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BoatAnchors at lists.theporch.com

<https://lists.theporch.com/mailman/listinfo/boatanchors>

From arc5 at ix.netcom.com Wed Oct 7 07:33:06 2020

From: arc5 at ix.netcom.com (David Stinson)

Date: Wed, 7 Oct 2020 06:33:06 -0500

Subject: [BoatAnchors] Fixed Screen Voltage in Plate Mod. Transmitter PA?  
Message-ID: <f213d1ce-cc82-4fc8-a372-9c5f24b13bf5@ix.netcom.com>

While working on reviving a plate-modulated AM transmitter, I came-upon some "expert" advice that has me doubting.? "Experts" are often well-meaning people who have their sometimes-misguided or premature "advice" accepted without question, simply because a friend said "he's an expert."

The word of mistaken "experts" often gets passed-around until it's taken as gospel.? One well-known expert, who otherwise has many good ideas, surprised me by willy-nilly increasing the Hi B+ filtering in a transmitter from 8 mFd to 220 mFd, saying: "What the heck; it can't hurt!" It most certainly CAN hurt, depending on the robustness of one's rectifiers and transformers.? 50s and 60s ham rigs- especially kits like Heath and Johnson- didn't leave a lot of extra head-room in their power supply designs and parts.? I'm not a fan of the DX-100 because it runs everything at "the hairy edge."

Now before I get started, let me confess that I'm no "expert."? My concerns may be nothing and I may not understand the principle involved. That's why I ask you- it's a blessing to know so many people who are smarter than me. :-)

In this case, the advice was to remove the PA screen buss from the modulated side of the mod transformer and move it to the fixed B+ buss side, fixing the screen voltage at Hi-B+ minus dividers.? This is supposed to make the modulator "more linear" and achieve a higher mod level.

If we consider what's happening during typical plate-and-screen modulation, both the plate and the screen are at

high potential at the peak of the modulation waveform, and both are at zero potential at the zero-crossing.

However, if we remove the screen from the modulated voltage and fix it at B+ minus dividers, then as we approach zero-crossing, the plate is at zero potential, but the screen is at full B+. We thus draw high screen current and may also encourage current from secondary emission.? This can't be a good thing for either the PA tube or our transformer, which is now forced to supply current at a higher duty cycle.

This bugs me.? Someone smarter than me please tell me why it's OK to do this.

Thanks!

GL OM ES 73 DE Dave AB5S

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This email has been checked for viruses by Avast antivirus software.  
<https://www.avast.com/antivirus>

From gumbear at pacbell.net Wed Oct 7 10:02:26 2020  
From: gumbear at pacbell.net (Arden Allen)  
Date: Wed, 7 Oct 2020 07:02:26 -0700  
Subject: [BoatAnchors] Fixed Screen Voltage in Plate Mod. Transmitter PA?  
In-Reply-To: <f213d1ce-cc82-4fc8-a372-9c5f24b13bf5@ix.netcom.com>  
References: <f213d1ce-cc82-4fc8-a372-9c5f24b13bf5@ix.netcom.com>  
Message-ID: <D2DD0E3B1A8B46CE8D0DD5D8648D7590@Lenovo>

I'm not an "expert" either, Dave. This so-called DX-100 improvement smacks of audiophoolery. Turning modulator tubes into junk and stressing the power transformer is not worth some assumed improvement in linearity. Personally I like my stuff to run inside maximum ratings and what's going on in that unappreciated kit rig is plain phoolish, IMO. The other side of the peanut gallery will say, why not, that's how you learn this stuff. It's a good point except for one thing overlooked: Who is the next owner of "Super DX-100"?

Arden

-----Original Message-----

From: David Stinson via BoatAnchors

Sent: Wednesday, October 07, 2020 4:33 AM

To: Boatanchors at mailman ; milsurplus at mailman

Cc: David Stinson

Subject: [BoatAnchors] Fixed Screen Voltage in Plate Mod. Transmitter PA?

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Thanks!

GL OM ES 73 DE Dave AB5S

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<https://www.avast.com/antivirus>

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BoatAnchors mailing list  
BoatAnchors at [lists.theporch.com](mailto:lists.theporch.com)  
<https://lists.theporch.com/mailman/listinfo/boatanchors>

From spr at earthlink.net Wed Oct 7 11:40:07 2020  
From: spr at earthlink.net (spr at earthlink.net)  
Date: Wed, 7 Oct 2020 08:40:07 -0700 (GMT-07:00)  
Subject: [BoatAnchors] Fixed Screen Voltage in Plate Mod. Transmitter PA?  
Message-ID: <135436701.3151.1602085207845@wamui-mouse.atl.sa.earthlink.net>

Folks,

If you have a rig with everything run a bit hot, a fan or fans are easy mods and don't change the original circuitry.

Regards,

Scott Robinson

>It most certainly CAN hurt, depending  
>on the robustness of one's rectifiers  
>and transformers. 50s and 60s ham  
>rigs- especially kits like Heath and  
>Johnson- didn't leave a lot of extra  
>head-room in their power supply  
>designs and parts. I'm not a fan of  
>the DX-100 because it runs everything  
>at "the hairy edge."

From k4pf at juno.com Wed Oct 7 12:17:48 2020

From: k4pf at juno.com (k4pf at juno.com)

Date: Wed, 7 Oct 2020 16:17:48 GMT

Subject: [BoatAnchors] Fixed Screen Voltage in Plate Mod. Transmitter PA?

Message-ID: <20201007.121748.13790.1@webmail04.vgs.unttd.com>

Dave Stinson wrote

<snip>

In this case, the advice was to remove  
the PA screen buss from the modulated  
side of the mod transformer and move  
it to the fixed B+ buss side,  
fixing the screen voltage at Hi-B+ minus  
dividers.?? This is supposed to make the  
modulator "more linear"  
and achieve a higher mod level. <snip>

The ITT/ Mackay Marine medium frequency CW/MCW transmitters  
used that scheme (pair of 813's modulated by a pair of 4CX250B's at 1800V). The  
4CX250B's were operated in class AB1.

The key was to include a large audio choke in series with the fixed  
813 screen supply, so the final screens would be self-modulating.  
If the choke wasn't included, you could never reach 100% modulation.

This set-up avoided the large power loss that would have occurred  
using a string of power resistors to feed the 813 screen supply  
from the modulated B+.



73,  
Ed Knobloch

From gumbear at pacbell.net Wed Oct 7 13:03:06 2020  
From: gumbear at pacbell.net (Arden Allen)  
Date: Wed, 7 Oct 2020 10:03:06 -0700  
Subject: [BoatAnchors] Fixed Screen Voltage in Plate Mod. Transmitter PA?  
In-Reply-To: <D2DD0E3B1A8B46CE8D0DD5D8648D7590@Lenovo>  
References: <f213d1ce-cc82-4fc8-a372-9c5f24b13bf5@ix.netcom.com>  
<D2DD0E3B1A8B46CE8D0DD5D8648D7590@Lenovo>  
Message-ID: <1B13493928F24928960F628A37CF3A8A@Lenovo>

By the way, folks, I have a nice DX-100 looking for a new home.

Arden

-----Original Message-----

From: Arden Allen via BoatAnchors  
Sent: Wednesday, October 07, 2020 7:02 AM  
To: Ham radios with tubes  
Cc: Arden Allen  
Subject: Re: [BoatAnchors] Fixed Screen Voltage in Plate Mod. Transmitter PA?

I'm not an "expert" either, Dave. ....

From arc5 at ix.netcom.com Wed Oct 7 18:54:49 2020  
From: arc5 at ix.netcom.com (David Stinson)  
Date: Wed, 7 Oct 2020 17:54:49 -0500  
Subject: [BoatAnchors] Fixed Screen Voltage in Plate Mod. Transmitter PA?  
In-Reply-To: <20201007.121748.13790.1@webmail04.vgs.untd.com>  
References: <20201007.121748.13790.1@webmail04.vgs.untd.com>  
Message-ID: <527b65fb-9ea1-f03d-0b9c-2877bf2234e9@ix.netcom.com>

On 10/7/2020 11:17 AM, k4pf at juno.com wrote:

>  
>  
> The ITT/ Mackay Marine medium frequency CW/MCW transmitters  
> used that scheme (pair of 813's modulated by a pair of 4CX250B's at  
1800V).? The 4CX250B's were operated in class AB1.  
>  
> The key was to include a large audio choke in series with the fixed  
> 813 screen supply, so the final screens would be self-modulating.  
> If the choke wasn't included, you could never reach 100% modulation.

I may be "thick," but I can't grasp how including an audio choke in the fixed screen supply buss would "self-modulate" the screen?

73 Dave S.

--

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<https://www.avast.com/antivirus>

From vilgotch1 at gmail.com Wed Oct 7 19:02:28 2020  
From: vilgotch1 at gmail.com (vilgotch1 at gmail.com)  
Date: Thu, 8 Oct 2020 10:02:28 +1100  
Subject: [BoatAnchors] Fixed Screen Voltage in Plate Mod. Transmitter PA?  
In-Reply-To: <527b65fb-9ea1-f03d-0b9c-2877bf2234e9@ix.netcom.com>  
References: <20201007.121748.13790.1@webmail04.vgs.unttd.com>  
<527b65fb-9ea1-f03d-0b9c-2877bf2234e9@ix.netcom.com>  
Message-ID: <005501d69cfd\$ef0cc9e0\$cd265da0\$@gmail.com>

Maybe it acts as a reactive load and reduces the screen voltage as the current varies?

-----Original Message-----

From: BoatAnchors <boatanchors-bounces at lists.theporch.com> On Behalf Of David Stinson via BoatAnchors  
Sent: Thursday, 8 October 2020 9:55 AM  
To: Ham radios with tubes <boatanchors at lists.theporch.com>  
Cc: David Stinson <arc5 at ix.netcom.com>  
Subject: Re: [BoatAnchors] Fixed Screen Voltage in Plate Mod. Transmitter PA?

On 10/7/2020 11:17 AM, k4pf at juno.com wrote:

>

I may be "thick," but I can't grasp how including an audio choke in the fixed screen supply buss would "self-modulate" the screen?

73 Dave S.

From rbsingl at ilstu.edu Wed Oct 7 19:06:32 2020

From: rbsingl at ilstu.edu (Singley, Rodger)  
Date: Wed, 7 Oct 2020 23:06:32 +0000  
Subject: [BoatAnchors] Fixed Screen Voltage in Plate Mod. Transmitter PA?  
In-Reply-To: <527b65fb-9ea1-f03d-0b9c-2877bf2234e9@ix.netcom.com>  
References: <20201007.121748.13790.1@webmail04.vgs.unttd.com>  
<527b65fb-9ea1-f03d-0b9c-2877bf2234e9@ix.netcom.com>  
Message-ID:  
<DM5PR03MB28283D1D8CC975BF0EB5ED37B80A0@DM5PR03MB2828.namprd03.prod.outlook.com>

See page 5 of this navy manual, it provides a concise explanation of how the screen choke operates to provide full modulation of a tetrode final: [http://www.navy-radio.com/manuals/eimb\\_102/900000\\_102\\_14.pdf](http://www.navy-radio.com/manuals/eimb_102/900000_102_14.pdf)

Rodger WQ9E

-----Original Message-----

From: BoatAnchors <boatanchors-bounces at lists.theporch.com> On Behalf Of David Stinson via BoatAnchors  
Sent: Wednesday, October 7, 2020 5:55 PM  
To: Ham radios with tubes <boatanchors at lists.theporch.com>  
Cc: David Stinson <arc5 at ix.netcom.com>  
Subject: Re: [BoatAnchors] Fixed Screen Voltage in Plate Mod. Transmitter PA?

[This message came from an external source. If suspicious, report to abuse at ilstu.edu<mailto:abuse at ilstu.edu>]

On 10/7/2020 11:17 AM, k4pf at juno.com wrote:

>  
>  
> The ITT/ Mackay Marine medium frequency CW/MCW transmitters > used that scheme (pair of 813's modulated by a pair of 4CX250B's at 1800V). The 4CX250B's were operated in class AB1.  
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73 Dave S.

--

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<https://www.avast.com/antivirus>

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BoatAnchors mailing list  
BoatAnchors at [lists.theporch.com](mailto:lists.theporch.com)  
<https://lists.theporch.com/mailman/listinfo/boatanchors>

From: [rbsingl at ilstu.edu](mailto:rbsingl at ilstu.edu) Wed Oct 7 19:10:06 2020  
From: [rbsingl at ilstu.edu](mailto:rbsingl at ilstu.edu) (Singley, Rodger)  
Date: Wed, 7 Oct 2020 23:10:06 +0000  
Subject: [BoatAnchors] Fixed Screen Voltage in Plate Mod. Transmitter PA?  
In-Reply-To:  
<[DM5PR03MB28283D1D8CC975BF0EB5ED37B80A0@DM5PR03MB2828.namprd03.prod.outlook.com](mailto:DM5PR03MB28283D1D8CC975BF0EB5ED37B80A0@DM5PR03MB2828.namprd03.prod.outlook.com)>  
References: <[20201007.121748.13790.1@webmail04.vgs.unttd.com](mailto:20201007.121748.13790.1@webmail04.vgs.unttd.com)>  
<[527b65fb-9ea1-f03d-0b9c-2877bf2234e9@ix.netcom.com](mailto:527b65fb-9ea1-f03d-0b9c-2877bf2234e9@ix.netcom.com)>  
<[DM5PR03MB28283D1D8CC975BF0EB5ED37B80A0@DM5PR03MB2828.namprd03.prod.outlook.com](mailto:DM5PR03MB28283D1D8CC975BF0EB5ED37B80A0@DM5PR03MB2828.namprd03.prod.outlook.com)>  
Message-ID:  
<[DM5PR03MB2828D101E5C74FB1F76CE1C5B80A0@DM5PR03MB2828.namprd03.prod.outlook.com](mailto:DM5PR03MB2828D101E5C74FB1F76CE1C5B80A0@DM5PR03MB2828.namprd03.prod.outlook.com)>

And additional information on the operation of a screen choke in various modulated finals appears throughout that Navy document listed in my prior email so don't stop with page 5. It is one of the better "texts" on modulation I have run across.

Rodger WQ9E

-----Original Message-----  
From: BoatAnchors <[boatanchors-bounces at lists.theporch.com](mailto:boatanchors-bounces at lists.theporch.com)> On Behalf Of Singley, Rodger via BoatAnchors  
Sent: Wednesday, October 7, 2020 6:07 PM  
To: Ham radios with tubes <[boatanchors at lists.theporch.com](mailto:boatanchors at lists.theporch.com)>  
Cc: Singley, Rodger <[rbsingl at ilstu.edu](mailto:rbsingl at ilstu.edu)>  
Subject: Re: [BoatAnchors] Fixed Screen Voltage in Plate Mod. Transmitter PA?

[This message came from an external source. If suspicious, report to abuse at [ilstu.edu](mailto:ilstu.edu)<[mailto:abuse at ilstu.edu](mailto:mailto:abuse at ilstu.edu)>]

See page 5 of this navy manual, it provides a concise explanation of how the screen choke operates to provide full modulation of a tetrode final: [http://www.navy-radio.com/manuals/eimb\\_102/900000\\_102\\_14.pdf](http://www.navy-radio.com/manuals/eimb_102/900000_102_14.pdf)

Rodger WQ9E

-----Original Message-----  
From: BoatAnchors <[boatanchors-bounces at lists.theporch.com](mailto:boatanchors-bounces at lists.theporch.com)> On Behalf Of David Stinson via BoatAnchors  
Sent: Wednesday, October 7, 2020 5:55 PM  
To: Ham radios with tubes <[boatanchors at lists.theporch.com](mailto:boatanchors at lists.theporch.com)>

Cc: David Stinson <arc5 at ix.netcom.com>

Subject: Re: [BoatAnchors] Fixed Screen Voltage in Plate Mod. Transmitter PA?

[This message came from an external source. If suspicious, report to abuse at ilstu.edu<mailto:abuse at ilstu.edu>]

On 10/7/2020 11:17 AM, k4pf at juno.com wrote:

>

>

> The ITT/ Mackay Marine medium frequency CW/MCW transmitters > used that scheme (pair of 813's modulated by a pair of 4CX250B's at 1800V). The 4CX250B's were operated in class AB1.

>

> The key was to include a large audio choke in series with the fixed > 813 screen supply, so the final screens would be self-modulating.

> If the choke wasn't included, you could never reach 100% modulation.

I may be "thick," but I can't grasp how including an audio choke in the fixed screen supply buss would "self-modulate" the screen?

73 Dave S.

--

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<https://www.avast.com/antivirus>

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BoatAnchors mailing list

BoatAnchors at lists.theporch.com

<https://lists.theporch.com/mailman/listinfo/boatanchors>

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BoatAnchors mailing list

BoatAnchors at lists.theporch.com

<https://lists.theporch.com/mailman/listinfo/boatanchors>

From gumbear at pacbell.net Wed Oct 7 19:45:43 2020

From: gumbear at pacbell.net (Arden Allen)

Date: Wed, 7 Oct 2020 16:45:43 -0700

Subject: [BoatAnchors] Fixed Screen Voltage in Plate Mod. Transmitter PA?

In-Reply-To: <527b65fb-9ea1-f03d-0b9c-2877bf2234e9@ix.netcom.com>

References: <20201007.121748.13790.1@webmail04.vgs.unttd.com>

<527b65fb-9ea1-f03d-0b9c-2877bf2234e9@ix.netcom.com>

Message-ID: <B1946208D6E549CDBB90FA72C1CF1C03@Lenovo>

Like all chokes do they return energy to the driving circuit. As positive going plate modulation causes plate current to increase screen current decreases. The choke returns voltage to the screens as screen current decreases helping to drive plate current harder. It's a form of positive feedback. The converse occurs when plate modulation goes in the negative direction. It's all about electron ballistics, the faster electrons are accelerated toward the plate less electrons are captured by the screen. You can see that in the plate and screen curves for the tubes.

Download the following for "expert" information:

[https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwi5n5HN0qPsAhVRC6wKHZ\\_lDEsQFjAFegQICBAC&url=http%3A%2F%2Fwww.ok1rr.com%2Ftubes%2Feimac%2FCare-and-Feeding-of-Power-Tetrodes.pdf&usg=AOvVaw1\\_izzZV3AG25w8m1i5j9YA](https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwi5n5HN0qPsAhVRC6wKHZ_lDEsQFjAFegQICBAC&url=http%3A%2F%2Fwww.ok1rr.com%2Ftubes%2Feimac%2FCare-and-Feeding-of-Power-Tetrodes.pdf&usg=AOvVaw1_izzZV3AG25w8m1i5j9YA)

Arden

-----Original Message-----

From: David Stinson via BoatAnchors

Sent: Wednesday, October 07, 2020 3:54 PM

To: Ham radios with tubes

Cc: David Stinson

Subject: Re: [BoatAnchors] Fixed Screen Voltage in Plate Mod. Transmitter PA?

On 10/7/2020 11:17 AM, k4pf at juno.com wrote:

>

>

> The ITT/ Mackay Marine medium frequency CW/MCW transmitters  
> used that scheme (pair of 813's modulated by a pair of 4CX250B's at  
1800V). The 4CX250B's were operated in class AB1.

>

> The key was to include a large audio choke in series with the fixed  
> 813 screen supply, so the final screens would be self-modulating.  
> If the choke wasn't included, you could never reach 100% modulation.

I may be "thick," but I can't grasp how  
including an audio choke in the fixed  
screen supply buss would "self-modulate"  
the screen?

73 Dave S.

--

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<https://www.avast.com/antivirus>

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BoatAnchors mailing list  
BoatAnchors at [lists.theporch.com](mailto:lists.theporch.com)  
<https://lists.theporch.com/mailman/listinfo/boatanchors>

From arc5 at ix.netcom.com Wed Oct 7 22:20:56 2020  
From: arc5 at ix.netcom.com (David Stinson)  
Date: Wed, 7 Oct 2020 21:20:56 -0500  
Subject: [BoatAnchors] [Milsurplus] Fixed Screen Voltage in Plate Mod.  
Transmitter PA?  
In-Reply-To: <[f213d1ce-cc82-4fc8-a372-9c5f24b13bf5@ix.netcom.com](mailto:f213d1ce-cc82-4fc8-a372-9c5f24b13bf5@ix.netcom.com)>  
References: <[f213d1ce-cc82-4fc8-a372-9c5f24b13bf5@ix.netcom.com](mailto:f213d1ce-cc82-4fc8-a372-9c5f24b13bf5@ix.netcom.com)>  
Message-ID: <[145c5461-8a7f-5eed-0ccf-223760c84371@ix.netcom.com](mailto:145c5461-8a7f-5eed-0ccf-223760c84371@ix.netcom.com)>

Thank you all for your insights into this issue.? I should have mentioned that the transmitters is a Johnson Viking II; similar to the DX-100 in some ways. The parts quality in the Johnson is worlds better and they don't put 800 V on the 807s.

Once Ed and Arden mentioned the reactance of an audio choke in the screen supply, "the light bulb went on."? But of course, none of these ham transmitters have such a choke, so the idea of tagging the PA screens to unmodulated B+ is a no-go.

Thanks again,  
GL OM ES 73 DE Dave AB5S

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<https://www.avast.com/antivirus>

From wlfuqu00 at uky.edu Fri Oct 9 16:39:02 2020  
From: wlfuqu00 at uky.edu (Fuqua, William)  
Date: Fri, 9 Oct 2020 20:39:02 +0000  
Subject: [BoatAnchors] Fixed Screen Voltage in Plate Mod. Transmitter PA?  
In-Reply-To: <[mailman.5.1602172801.20623.boatanchors@lists.theporch.com](mailto:mailman.5.1602172801.20623.boatanchors@lists.theporch.com)>  
References: <[mailman.5.1602172801.20623.boatanchors@lists.theporch.com](mailto:mailman.5.1602172801.20623.boatanchors@lists.theporch.com)>

Message-ID:

<BN7PR03MB44990DE6236A1345997A3332CB080@BN7PR03MB4499.namprd03.prod.outlook.com>

Triode tubes present a fairly constant RF output impedance as the plate voltage swings thru the modulation cycle. Output impedance of a class-C tube amplifier is proportional to DC plate voltage/ DC plate current. Triode tubes present a fairly constant RF output impedance as the plate voltage swings thru the modulation cycle.

However, tetrode tube do not if only the plate is modulated. The plate current is fairly independent of the plate current thru out most of the cycle. However, the plate current is fairly proportional to the screen voltage. So if the screen voltage is always the same fraction of the plate voltage thru out the modulation cycle, the output (plate) impedance will continue to match the output network's input impedance.

Then there is an issue with the modulators output impedance matching the tetrode tube class C amplifier. The same argument also applies as well. Without keeping the screen voltage proportional to the plate voltage the modulator would see a varying impedance as well. These conditions would create considerable distortion.

73

Bill WA4LAV

---

From wlfuqu00 at uky.edu Fri Oct 9 17:26:47 2020

From: wlfuqu00 at uky.edu (Fuqua, William)

Date: Fri, 9 Oct 2020 21:26:47 +0000

Subject: [BoatAnchors] Fixed Screen Voltage in Plate Mod. Transmitter PA?

In-Reply-To:

<BN7PR03MB44990DE6236A1345997A3332CB080@BN7PR03MB4499.namprd03.prod.outlook.com>

References: <mailman.5.1602172801.20623.boatanchors@lists.theporch.com>,  
<BN7PR03MB44990DE6236A1345997A3332CB080@BN7PR03MB4499.namprd03.prod.outlook.com>

Message-ID:

<BN7PR03MB44993CB4D8E0881C245D1EDFCB080@BN7PR03MB4499.namprd03.prod.outlook.com>

Cut and paste got me again

---

From: BoatAnchors <boatanchors-bounces at lists.theporch.com> on behalf of Fuqua, William <wlfuqu00 at uky.edu>

Sent: Friday, October 9, 2020 4:39 PM

To: boatanchors at lists.theporch.com <boatanchors at lists.theporch.com>

Subject: Re: [BoatAnchors] Fixed Screen Voltage in Plate Mod. Transmitter PA?

CAUTION: External Sender



Triode tubes present a fairly constant RF output impedance as the plate voltage swings thru the modulation cycle. Output impedance of a class-C tube amplifier is proportional to DC plate voltage/ DC plate current. Triode tubes present a fairly constant RF output impedance as the plate voltage swings thru the modulation cycle.

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BoatAnchors mailing list

BoatAnchors at lists.theporch.com

[https://nam04.safelinks.protection.outlook.com/?](https://nam04.safelinks.protection.outlook.com/?url=https%3A%2F%2Flists.theporch.com%2Fmailman%2Flistinfo%2Fboatanchors&data=02%7C01%7Cw1fuqu00%40uky.edu%7Cc7cd6bc5fb964516a5a208d86c935deb%7C2b30530b69b64457b818481cb53d42ae%7C0%7C0%7C637378727477978099&data=qmpp1FvU1%2F7p1ANLSZzZ6vubqI2GwLchN0c1SkU0mXg%3D&reserved=0)

[url=https%3A%2F%2Flists.theporch.com%2Fmailman%2Flistinfo%2Fboatanchors&data=02%7C01%7Cw1fuqu00%40uky.edu%7Cc7cd6bc5fb964516a5a208d86c935deb%7C2b30530b69b64457b818481cb53d42ae%7C0%7C0%7C637378727477978099&data=qmpp1FvU1%2F7p1ANLSZzZ6vubqI2GwLchN0c1SkU0mXg%3D&reserved=0](https://nam04.safelinks.protection.outlook.com/?url=https%3A%2F%2Flists.theporch.com%2Fmailman%2Flistinfo%2Fboatanchors&data=02%7C01%7Cw1fuqu00%40uky.edu%7Cc7cd6bc5fb964516a5a208d86c935deb%7C2b30530b69b64457b818481cb53d42ae%7C0%7C0%7C637378727477978099&data=qmpp1FvU1%2F7p1ANLSZzZ6vubqI2GwLchN0c1SkU0mXg%3D&reserved=0)

From wa5cab at cs.com Sat Oct 10 03:00:47 2020

From: wa5cab at cs.com (Robert Downs)

Date: Sat, 10 Oct 2020 02:00:47 -0500

Subject: [BoatAnchors] Fixed Screen Voltage in Plate Mod. Transmitter PA?

In-Reply-To:

<BN7PR03MB44990DE6236A1345997A3332CB080@BN7PR03MB4499.namprd03.prod.outlook.com>

References: <mailman.5.1602172801.20623.boatanchors@lists.theporch.com>

<BN7PR03MB44990DE6236A1345997A3332CB080@BN7PR03MB4499.namprd03.prod.outlook.com>

Message-ID: <007e01d69ed3\$1551aa90\$3ff4ffb0\$@com>

All of the plate modulated tube-type military sets generally either use a triode output amp tube or modulate the screen and the plate. Unfortunately, that isn't generally the case with the cheaper civilian sets.

Robert Downs

-----Original Message-----

From: BoatAnchors [mailto:boatanchors-bounces at lists.theporch.com] On Behalf Of Fuqua, William

Sent: Friday, October 9, 2020 15:39

To: boatanchors at lists.theporch.com

Subject: Re: [BoatAnchors] Fixed Screen Voltage in Plate Mod. Transmitter PA?

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Bill WA4LAV

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BoatAnchors mailing list

BoatAnchors at lists.theporch.com

<https://lists.theporch.com/mailman/listinfo/boatanchors>

From arc5 at ix.netcom.com Sat Oct 10 07:53:28 2020

From: arc5 at ix.netcom.com (David Stinson)

Date: Sat, 10 Oct 2020 06:53:28 -0500

Subject: [BoatAnchors] Shade-Tree Scope Calibration

Message-ID: <160b60ea-735a-d6ab-05c8-f3c7bc42ba30@ix.netcom.com>

Shade-Tree Scope Calibration at RF.

IMHO, a properly-functioning scope is  
the First member of the "Holy Trinity"  
of test equipment-  
The Scope, The Meter

and The ZM-11 Bridge, Amen.

But a scope is only as good as the calibration and linearity of it's vertical amplifiers.? One can use a variable voltage supply and see if the amplifier agrees with what it says, but who's to say the supply is properly cal'ed? Improperly calibrated test equipment can have you chasing your tail for days.

For checking the scope at DC input, perhaps a 300V supply feeding the top of a Zener stack, then stepping down the stack, checking agreement at each step? Can someone recommend a Zener family with closer tolerances than most?

Well and good for DC, but how about "where the rubber meets the road" at RF?? An old vertical amp in a Tek scope might be spot-on at DC or 60 Hz, but that's no promise of how it behaves at 4 or 7 MC.

So here's the question: You don't have the NIST-certified standards available and you aren't going to take a 2nd mortgage to get them.? You need to scope a transmitter's output and read the PTP voltage so you can calculate the true power output in Watts, then use that to calibrate a Wattmeter. I have three or four Wattmeters around here and none of them agree with each other. One Drake is connected to a Johnson Viking II with AM 270 V PTP output and the meter says the carrier is only 45 Watts.... Uhhh, no...

So, if you calibrate your scopes at RF, how do you do it?

TNX OM ES 73 DE Dave AB5S

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This email has been checked for viruses by Avast antivirus software.  
<https://www.avast.com/antivirus>

From john.shriver at gmail.com Sat Oct 10 09:02:31 2020  
From: john.shriver at gmail.com (John Shriver)  
Date: Sat, 10 Oct 2020 09:02:31 -0400  
Subject: [BoatAnchors] Shade-Tree Scope Calibration  
In-Reply-To: <160b60ea-735a-d6ab-05c8-f3c7bc42ba30@ix.netcom.com>  
References: <160b60ea-735a-d6ab-05c8-f3c7bc42ba30@ix.netcom.com>  
Message-ID: <CC9EF05C-76F4-499E-8AA0-1179CFBD8A67@gmail.com>

All you really need is a good square wave. Has harmonics up to yin-yang. Note that old letter and 1-series plug-ins specified rise-time, not bandwidth. Do you get the rise time specified in the calibration procedure? If so, the bandwidth is fine.

Tektronix used to make the 106 fast-rise pulse generator. I have one that works fine. They aren't rare, but it uses irreplaceable diodes for the 1 ns rise time outputs. But the 12 nS rise time output is just vanilla tubes and transistors.

Look at Jim Williams' tech note about fast-rise pulse generators. Very easy to make one. <https://www.analog.com/media/en/technical-documentation/application-notes/an47fa.pdf> <<https://www.analog.com/media/en/technical-documentation/application-notes/an47fa.pdf>>

You do also want to check that the attenuator is properly compensated, but since it's all passive, and we know you're wise enough to not tighten all the screws?, it's almost certainly fine. It's not something that's likely to drift."

Tektronix did also make the 191 constant-amplitude signal generator. Some on eBay now. Of course, how do you calibrate that? Although, given the design, if it is working reasonably well, it's probably fine. It just detects the RF and uses that for feedback to control the amplitude.

From arc5 at ix.netcom.com Sat Oct 10 10:01:49 2020  
From: arc5 at ix.netcom.com (David Stinson)  
Date: Sat, 10 Oct 2020 09:01:49 -0500  
Subject: [BoatAnchors] Shade-Tree Scope Calibration  
In-Reply-To: <CC9EF05C-76F4-499E-8AA0-1179CFBD8A67@gmail.com>  
References: <160b60ea-735a-d6ab-05c8-f3c7bc42ba30@ix.netcom.com>  
<CC9EF05C-76F4-499E-8AA0-1179CFBD8A67@gmail.com>  
Message-ID: <d44adf59-b14c-f2ec-4ee9-47f0aa82d67f@ix.netcom.com>

Thank you kindly, John. Good info!

On 10/10/2020 8:02 AM, John Shriver wrote:

>

> Tektronix did also make the 191 constant-amplitude signal generator

--

This email has been checked for viruses by Avast antivirus software.  
<https://www.avast.com/antivirus>

From gumbear at pacbell.net Sat Oct 10 10:43:32 2020  
From: gumbear at pacbell.net (Arden Allen)  
Date: Sat, 10 Oct 2020 07:43:32 -0700  
Subject: [BoatAnchors] Shade-Tree Scope Calibration  
In-Reply-To: <160b60ea-735a-d6ab-05c8-f3c7bc42ba30@ix.netcom.com>  
References: <160b60ea-735a-d6ab-05c8-f3c7bc42ba30@ix.netcom.com>  
Message-ID: <8B437D1D93EA40E1A529FB96EE8B5764@Lenovo>

Well, I do have the suite of Tektronix cal instruments with one exception but they didn't total more than \$500. To do accurate DC vertical amplifier calibration I use an electromechanical chopper to create a precise square wave from an accurately set DC power supply. That depends on an accurate bench multimeter that I spent \$100 to get NIST traceable calibrated. If you want your work to be quality based you have to spend some money but you won't go broke if you shop carefully and season with some ingenuity.

Arden

> .....So here's the question: You don't have the NIST-certified standards available and you aren't going to take a 2nd mortgage to get them. You need to scope a transmitter's output and read the PTP voltage so you can calculate the true power output in Watts, then use that to calibrate a Wattmeter. I have three or four Wattmeters around here and none of them agree with each other. One Drake is connected to a Johnson Viking II with AM 270 V PTP output and the meter says the carrier is only 45 Watts.... Uhhh, no...

So, if you calibrate your scopes at RF, how do you do it?

From spr at earthlink.net Sat Oct 10 11:04:14 2020  
From: spr at earthlink.net (spr at earthlink.net)  
Date: Sat, 10 Oct 2020 08:04:14 -0700 (GMT-07:00)  
Subject: [BoatAnchors] Shade-Tree Scope Calibration  
Message-ID: <1343626250.2324.1602342254695@wamui-bison.atl.sa.earthlink.net>

Hi David,

I just looked on eBay, and 191s are going for \$50-\$75.

/scott

-----Original Message-5.

>From: David Stinson via BoatAnchors <boatanchors at lists.theporch.com>  
>Sent: Oct 10, 2020 7:01 AM  
>To: John Shriver <john.shriver at gmail.com>, Ham radios with tubes <boatanchors at lists.theporch.com>  
>Cc: David Stinson <arc5 at ix.netcom.com>  
>Subject: Re: [BoatAnchors] Shade-Tree Scope Calibration  
>  
>Thank you kindly, John. Good info!  
>  
>On 10/10/2020 8:02 AM, John Shriver wrote:  
>>  
>> Tektronix did also make the 191 constant-amplitude signal generator  
>  
>--  
>This email has been checked for viruses by Avast antivirus software.  
><https://www.avast.com/antivirus>  
>  
>-----  
>BoatAnchors mailing list  
>BoatAnchors at lists.theporch.com  
><https://lists.theporch.com/mailman/listinfo/boatanchors>

From gumbear at pacbell.net Sat Oct 10 11:07:28 2020  
From: gumbear at pacbell.net (Arden Allen)  
Date: Sat, 10 Oct 2020 08:07:28 -0700  
Subject: [BoatAnchors] Shade-Tree Scope Calibration  
In-Reply-To: <CC9EF05C-76F4-499E-8AA0-1179CFBD8A67@gmail.com>  
References: <160b60ea-735a-d6ab-05c8-f3c7bc42ba30@ix.netcom.com>  
<CC9EF05C-76F4-499E-8AA0-1179CFBD8A67@gmail.com>  
Message-ID: <6536C5600AE247F7819ECCBA8E4A9FFF@Lenovo>

Hi John - One agree, one disagree. Yes, certain built in circuit elements can be depended on but age, wear and tear is always a factor. I recently went through a half dozen cheaply bought "parts or repair" Tek 465's. I have a 106, 191 and 184. I can get by without the 184 time mark generator but it makes things easier. The 106 is the cat's meow. Going through the complete calibration procedure turned up lots of issues with square wave response of the vertical attenuators. The 106 GaAs diodes can be replaced with modern Schottky hot carrier diodes, there's a Tek service note on doing it. The 191 is a tricky animal. I calibrate the 50 kHz output with an accurate AC voltmeter. I depend on the frequency response of the RF

detector to maintain an accurate output up to 100 MHz. The main problem with the 191 is its calibration pots, they are too goosey for precise setting so I replaced them all with multi-turn cermet trimmers.

Arden

-----Original Message-----

From: John Shriver via BoatAnchors

Sent: Saturday, October 10, 2020 6:02 AM

To: Ham radios with tubes

Cc: John Shriver

Subject: Re: [BoatAnchors] Shade-Tree Scope Calibration

All you really need is a good square wave. Has harmonics up to yin-yang. Note that old letter and 1-series plug-ins specified rise-time, not bandwidth. Do you get the rise time specified in the calibration procedure? If so, the bandwidth is fine.

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<https://www.analog.com/media/en/technical-documentation/application-notes/an47fa.pdf>

<<https://www.analog.com/media/en/technical-documentation/application-notes/an47fa.pdf>>

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---

BoatAnchors mailing list

BoatAnchors at [lists.theporch.com](mailto:lists.theporch.com)

<https://lists.theporch.com/mailman/listinfo/boatanchors>

From dave at horsfall.org Sat Oct 10 18:53:43 2020

From: dave at horsfall.org (Dave Horsfall)  
Date: Sun, 11 Oct 2020 09:53:43 +1100 (EST)  
Subject: [BoatAnchors] Shade-Tree Scope Calibration  
In-Reply-To: <160b60ea-735a-d6ab-05c8-f3c7bc42ba30@ix.netcom.com>  
References: <160b60ea-735a-d6ab-05c8-f3c7bc42ba30@ix.netcom.com>  
Message-ID: <alpine.BSF.2.21.9999.2010110943490.91515@aneurin.horsfall.org>

On Sat, 10 Oct 2020, David Stinson via BoatAnchors wrote:

> IMHO, a properly-functioning scope is the First member of the "Holy  
> Trinity" of test equipment- The Scope, The Meter and The ZM-11 Bridge,  
> Amen.

And it really helps if you know how to use a scope :-) I found a wonderful publication "Oscilloscope Basics" (by Rohde and Schwartz of course) on the 'net; it's called "Oscilloscope-Basics.pdf" and even though I've been using scopes for years I learned a few things from it.

I can send a copy to anyone if they can't find it (I can't remember the URL; I just happened to stumble across it); it's about a meg or so.

-- Dave VK2KFU

From gumbear at pacbell.net Sat Oct 10 19:17:46 2020  
From: gumbear at pacbell.net (Arden Allen)  
Date: Sat, 10 Oct 2020 16:17:46 -0700  
Subject: [BoatAnchors] Shade-Tree Scope Calibration  
In-Reply-To: <alpine.BSF.2.21.9999.2010110943490.91515@aneurin.horsfall.org>  
References: <160b60ea-735a-d6ab-05c8-f3c7bc42ba30@ix.netcom.com>  
<alpine.BSF.2.21.9999.2010110943490.91515@aneurin.horsfall.org>  
Message-ID: <50B34ABEA7374BCEBABDB30007953D80@Lenovo>

Here's about a month's worth of bed time reading:

[https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwjczuXFk6vsAhVFL6wKHSF4CWQQFjACegQIARAC&url=https%3A%2F%2Fengineering.case.edu%2Fflab%2Fcircuitlab%2Fsites%2Fengineering.case.edu.lab.circuitlab%2Ffiles%2Fdocs%2F0scilloscope\\_Fundamentals\\_-\\_Tektronix.pdf&usq=A0vVaw2rhqdy4vgdeqhI6Ge-0oAZ](https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwjczuXFk6vsAhVFL6wKHSF4CWQQFjACegQIARAC&url=https%3A%2F%2Fengineering.case.edu%2Fflab%2Fcircuitlab%2Fsites%2Fengineering.case.edu.lab.circuitlab%2Ffiles%2Fdocs%2F0scilloscope_Fundamentals_-_Tektronix.pdf&usq=A0vVaw2rhqdy4vgdeqhI6Ge-0oAZ)

Arden

-----Original Message-----

From: Dave Horsfall  
Sent: Saturday, October 10, 2020 3:53 PM  
To: BoatAnchors List  
Subject: Re: [BoatAnchors] Shade-Tree Scope Calibration



On Sat, 10 Oct 2020, David Stinson via BoatAnchors wrote:

> IMHO, a properly-functioning scope is the First member of the "Holy  
> Trinity" of test equipment- The Scope, The Meter and The ZM-11 Bridge,  
> Amen.

From gumbear at pacbell.net Sun Oct 11 16:41:52 2020

From: gumbear at pacbell.net (Arden Allen)

Date: Sun, 11 Oct 2020 13:41:52 -0700

Subject: [BoatAnchors] Boatanchors away!

In-Reply-To: <0094FF04372D45078C32EEA2BCA40B6F@Lenovo>

References: <b7f74801-b70c-b9b1-a9fa-055ad5c964c7@comcast.net>

<CAFTq00SFDM0-jEe-wqYzm7J7rutmXDjg5qBrQNUrUq9C2J-iGA@mail.gmail.com>

<F5AC1D185951469590E2DF09C7116ED0@Lenovo>

<51739C7EFCE74CB7B2493E1E5499E4AC@Lenovo>

<0094FF04372D45078C32EEA2BCA40B6F@Lenovo>

Message-ID: <E399F6FE3DF04D99B1EE9C6A567E2C8C@Lenovo>

There's still lots of gear wanting to clear out of here. Come get it!

HP 330B Harmonic Distortion Analyzer

HP 330C Harmonic Distortion Analyzer

Boonton 202B FM Sig Gen #1 - rebuilt power supply, works fine

HP H13-120AR (specialized rack mount HP 120)

HP 302A Wave Analyzer

General Radio 805C Standard Signal Generator - works well

Hallicrafters SX-42 receiver

WW2 Morale Receiver (no name plate), four bands, slide rule dial

National NCX-3 transceiver #1

National NCX-3 transceiver #2

National AC power supply for NCX-3

National NC-183

National NC-300

Multi-Elmac AF-67 with power supply

R-366/TRR5 receiver

RBL-3/CWQ-46161-A receiver

Swan 260 transceiver

Swan 270B transceiver #1

Swan 270B transceiver #2

Globe Star AC operated CB transceiver (nice)

Johnson Viking II #1

Johnson Viking II #2 (some cabinet damage)

EH Scott SLR-F

Heathkit DX-100

Tektronix 547 #1

Tektronix 547 #2

Tektronix 545B

Tektronix 575

If you are interested in any item let me know. Easy terms: Just load it up and take it.

Arden Allen  
KB6NAX

From k1lky68 at gmail.com Sun Oct 11 19:13:23 2020  
From: k1lky68 at gmail.com (Roy Morgan)  
Date: Sun, 11 Oct 2020 19:13:23 -0400  
Subject: [BoatAnchors] Boatanchors away!  
In-Reply-To: <E399F6FE3DF04D99B1EE9C6A567E2C8C@Lenovo>  
References: <E399F6FE3DF04D99B1EE9C6A567E2C8C@Lenovo>  
Message-ID: <22B8E347-0B83-4D64-96D0-69974077AE9D@gmail.com>

Arden,

'Scuze me but where are you and this equipment located??

Roy Morgan  
K1LKY Western Mass

> On Oct 11, 2020, at 4:44 PM, Arden Allen via BoatAnchors <boatanchors at lists.theporch.com> wrote:  
>  
> ?There's still lots of gear wanting to clear out of here. Come get It!

From gumbear at pacbell.net Mon Oct 12 13:46:28 2020  
From: gumbear at pacbell.net (Arden Allen)  
Date: Mon, 12 Oct 2020 10:46:28 -0700  
Subject: [BoatAnchors] Boatanchors away!  
In-Reply-To: <E399F6FE3DF04D99B1EE9C6A567E2C8C@Lenovo>  
References: <b7f74801-b70c-b9b1-a9fa-055ad5c964c7@comcast.net>  
<CAFTq00SFDm0-jEe-wqYzm7J7rutmXDjg5qBrQNUrUq9C2J-iGA@mail.gmail.com>  
<F5AC1D185951469590E2DF09C7116ED0@Lenovo>  
<51739C7EFCE74CB7B2493E1E5499E4AC@Lenovo>  
<0094FF04372D45078C32EEA2BCA40B6F@Lenovo>  
<E399F6FE3DF04D99B1EE9C6A567E2C8C@Lenovo>  
Message-ID: <0E4A37BD418D44D999193A907AB1C33F@Lenovo>

Folks, the inventory is shrinking: National NCX-3's and power supply, and SX-42 are on their way to a new home. Lot's of great stuff remaining. Friendly terms - just take it!

-----Original Message-----

From: Arden Allen via BoatAnchors

Sent: Sunday, October 11, 2020 1:41 PM  
To: Ham radios with tubes  
Cc: Arden Allen  
Subject: Re: [BoatAnchors] Boatanchors away!

There's still lots of gear wanting to clear out of here. Come get it!

HP 330B Harmonic Distortion Analyzer  
HP 330C Harmonic Distortion Analyzer  
Boonton 202B FM Sig Gen #1 - rebuilt power supply, works fine  
HP H13-120AR (specialized rack mount HP 120)  
HP 302A Wave Analyzer  
General Radio 805C Standard Signal Generator - works well  
WW2 Morale Receiver (no name plate), four bands, slide rule dial  
National NC-183  
National NC-183D  
National NC-300  
Multi-Elmac AF-67 with power supply  
R-366/TRR5 receiver  
RBL-3/CWQ-46161-A receiver  
Swan 260 transceiver  
Swan 270B transceiver #1  
Swan 270B transceiver #2  
Johnson Viking II #1  
Johnson Viking II #2 (some cabinet damage)  
EH Scott SLR-F  
Heathkit DX-100  
Tektronix 547 #1  
Tektronix 547 #2  
Tektronix 545B  
Tektronix 575

Arden Allen  
KB6NAX

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BoatAnchors mailing list  
BoatAnchors at [lists.theporch.com](mailto:lists.theporch.com)  
<https://lists.theporch.com/mailman/listinfo/boatanchors>